

The initials E., C., L., J. C., are those of Mr. Ellis, Mr. Criswick, Mr. Lynn, and Mr. Carpenter.

Occultation of a Star by the Moon.

Day of Observation.	Phenomenon.	Moon's limb.	Mean Solar Time.		
			h	m	s
1867, Jan 16.	Aldebaran, disapp.	Bright.	7	25	9.9.

The observer was Mr. Carpenter; he stated that the time noted is uncertain to a second, owing to the wind making it difficult to hear the clock; the sky was also cloudy, and the star faint; but the disappearance was instantaneous.

A Catalogue of "New Stars." By G. F. Chambers, Esq.

In compiling my Catalogue of Uncalculated Comets I was very much embarrassed in consequence of the Chinese chroniclers having intermingled with their comets proper a number of objects specifically termed by them "new stars." In some cases it was tolerably clear from internal evidence that these "new stars" were veritable comets, but in others it was impossible to express a confident opinion. Some of these uncertain objects were added to the cometary list, and others were wholly passed over, without, I am constrained to admit, any definite rule being conformed to. This manifestly involved serious drawbacks, and on due reflection, conceiving that it would be convenient to astronomers to possess a comprehensive catalogue of all recorded temporary stars, I decided to detach from the comets all objects which certainly were not comets and unite them with all objects which certainly were stars. The two lists, that is to say, this one and that on p. 352 of my *Descriptive Astronomy* between them, comprise, it is supposed, every comet of which an unequivocal record has been handed down to us. I cannot, however, assert that this list is equally exhaustive in regard to the temporary stars. Let it be understood, therefore, that whilst the Comet Catalogue probably contains no stars, this, most likely, does contain some comets.

I have not included objects which are commonly, and on sufficient authority, dealt with as Variable Stars and usually included in Variable Star Lists, such will be found elsewhere.

The references cited as 'Biot' are to E. Biot's lists published in the *Connaissance des Temps* for 1846. The more notorious temporary stars I have not professed to speak of at length, as they are described in most books on Astronomy. For the sake of completeness, however, it was necessary to allude to them.

133 B.C.

In July an extraordinary star appeared near β, π, ϵ *Scorpii*.
—(Biot.) Perhaps identical with the comet of 134.

76 B.C.

In October an extraordinary star appeared between α and δ *Ursæ Majoris*.—(Biot.)

101 A.D.

On Dec. 30, a small yellowish-blue star appeared in the group $\alpha \gamma \eta \epsilon \kappa$ *Leonis* (Biot); as no mention is made of any change of position it may have been merely a temporary star. (Hind's *Companion to the Almanac*, 1859, p. 12.)

107.

On Sept. 13, a strange star appeared to the S.W. of $\delta \epsilon \eta$ *Canis Majoris*.—(Biot.)

123.

In December–January an extraordinary star was seen in the region near α *Herculis* and α *Ophiuchi*.—(Biot.)

173.

On Dec. 10 a star appeared between α and β *Centauri* and remained visible eight months; it was as large as a mat of bamboo and presented in succession five different colours.—(Biot.)

290.

In May a strange star was observed within the Circumpolar regions.—(Ma-tuoan-lin.)

304.

In May–June an extraordinary star was seen in the *Hyades*.—(Biot.)

369.

From the 2nd to the 7th Moon an extraordinary star was visible in the western boundary of the circle of perpetual apparition. The 2nd Moon commenced about March 25, and the 7th about August 20.—(Biot.)

386.

Between April and July a strange star was seen in $\lambda \mu \psi$ *Sagittarii*.—(Biot Gaubil.)

389 \pm .

A star blazed out near α *Aquilæ* as bright as *Venus*. It lasted only three weeks.—(Cuspius.)

393.

Between March and October a strange star appeared in the division of μ^2 *Scorpii*.—(Biot.)

533.

On March 1, a great star appeared.—(Ma-tuoan-lin.) There are no further particulars.

561.

On Oct. 8, an extraordinary star was seen within division of α *Crateris*.—(Biot.)

577.

Pontanus (*Hist. Gelr.* iii.) dates the appearance of a comet in the year that the son of Chilperic died, consequently in 577. Pingré thinks that it is the object recorded by Gregory of Tours as having appeared in the middle of the Moon on Nov. 11, during the celebration of the vigils of St. Martin, and probably a meteor.—(*Comét.* i. 323.)

827(?).

The year is very doubtful. The Arabian Astronomers, Haly and Ben Mohammed Albumazar, observed at Bagdad a star in *Scorpio* for 4 months. It was as bright as the Moon in its quarters.

829.

In November an extraordinary star was seen in $\zeta\theta\pi$ *Canis Minoris*.—(Biot.)

945.

A new star was seen near *Cassiopeia*.—(Leovilius, *De Conjunctionibus magnis*.)

1011.

On Feb. 8 an extraordinary star was seen near $\sigma\tau\zeta\psi$ *Sagittarii*.—(Biot.)

1012.

From May to August (it would seem) a star was visible in *Aries*. It was of astonishing size and dazzled the eye. It varied in size, and sometimes it was not seen at all. It lasted 3 months.—(Hepidannus, *Annales*.)

1054.

On July 4, an extraordinary star appeared to the S. E. of ζ *Tauri*. It disappeared at the end of the year.—(Biot.)

1139.

In this year an extraordinary star appeared in the division of α *Virginis*.—(Biot.)

C

1174 \pm

An immense star shone by night and by day in the W. It was surrounded by numerous others all bright red in colour. (Boethius, *Hist. Scot.* xiii.) No doubt a meteor.—(Pingré.)

1203.

Between July 28 and August 6 an extraordinary star was seen in the S. E. in the division μ^2 *Scorpii*. The colour was bluish-white resembling *Saturn*.—(Biot.)

1264.

A new star was seen in the vicinity of *Cassiopeia*.

1572.

In Nov. 1572 a new star became visible in *Cassiopeia*, it lasted till March 1574.

1584.

On July 1 a star appeared in the division π *Scorpii*.—(Biot.)

1604.

A new star appeared in *Ophiuchus*; at one time it was as bright as *Venus*. It was first seen on October 10, 1604, and last seen about the middle of October 1605. Its known duration was therefore about 12 months; but inasmuch as it was lost in consequence of coming into conjunction with the Sun its real duration might have been fourteen or fifteen months. At any rate in March 1606 it had become invisible.

Junior Carlton Club,
London, April 11, 1867.

In the *Ast. Nach*, No. 1629, is contained a paper by Prof. Schiaparelli, "Sur la Relation qui existe entre les Comètes et les Etoiles filantes."

After referring to his letters to Padre Secchi published in the Bulletins of the Observatory of Rome, he reproduces the results as to the August meteor, see *Monthly Notices*, pp. 133–134. He remarks: "In the writings referred to, the position of the Radiant Point of the November meteors had been taken as the point determined by the American observations of 1833,

viz. γ Leonis, which is erroneous by several degrees. The new calculation, compared with Dr. Oppolzer's elements of the comet *Ast. Nach.* 1624, the perihelion passage being reduced to Milan Mean Time is—

	Meteors, 13th Nov.	Comet I, 1866.
Perihelion passage	Nov. 10, 092	Jan. 11, 160
Longitude of Perihelion ...	56° 25' 9"	60° 28' 0"
Node ...	231 28 2	231 26 1
Inclination ...	17 44 5	17 18 1
Perihelion distance	0.9873	0.9705
Excentricity ...	0.9046	0.9054
Semi-axis major	10.340	10.324
Revolution ...	33.250 years	33.176
Motion ...	retrograde	retrograde

where it is assumed, 1° , the time of max. of the meteors is Nov. 13 13^h 11^m Greenwich M.T. ; 2° , the position of the radiant point, long. $143^\circ 12'$, lat. N. $10^\circ 16'$; 3° , period 33.25 years (Newton). The position of the radiant point is that determined by Mr. Herschel, *Monthly Notices*, vol. xxvii. p. 19 ; but taking the longitude 145° instead of $143^\circ 12'$, the discrepancy of 4° in the longitude of perihelion would be made to disappear." M. Schiaparelli asks, Are the meteors to be considered as swarms of minute comets, or as the products of the dissolution of large comets?

On the Orbit of the November Meteors. By Prof. J. C. Adams.

It is known to the President and to several members of the Society that I have been for some time past engaged in researches respecting the November Meteors, and allusion is made to some of my earlier results in the last Annual Report. As my investigations are now in some measure complete, and the results which I have obtained appear to me important, I have thought that they may not be without interest for the Society.

In a memoir on the November Star Showers, by Professor H. A. Newton, contained in Nos. 111 and 112 of *The American Journal of Science and Arts*, the author has collected and discussed the original accounts of 13 displays of the above phenomenon in years ranging from A.D. 902 to 1833.

The following table exhibits the dates of these displays, and the Earth's longitude at each date, together with the same particulars for the shower of November last, which have been added for the sake of completeness.